**Atomic and Molecular Structure: Properties and Connections**

Ms. OK, PreAP Biology, 2014-2015

**Particles:** Fill in the following particles in the appropriately placed boxes on your concept map.

|  |
| --- |
| Neutrons |
| Electrons |
| Protons |

**Connections:** Fill in the numbers corresponding to the correct connections in the circles on your concept map.

|  |  |
| --- | --- |
| 1 | A subatomic particle with a neutral (0) charge that is located in the nucleus of an atom is called a… |
| 2 | This value represents the number of neutrons and protons in an atom, since they are the largest particles within the atom. (Electrons are TINY!) |
| 3 | This is a type of compound that is formed when atoms share a pair of electrons. Each atom donates an electron to be shared in this pair. The type of bonding that occurs when electrons are shared between atoms is called covalent bonding. |
| 4 | These are temporary, weak attractions that form BETWEEN different molecules (not within a single molecule). For example, the molecules in a gecko’s toes are temporarily attracted to the surface it climbs upon. This causes the toes to briefly “stick” to the surface like suction cups. |
| 5 | Atoms are composed of three smaller particles called … |
| 6 | These are the atoms with an overall positive vs. negative charges that are created and attract during ionic bonding because they have either lost or gained an electron. |
| 7 | A subatomic particle with a positive (+) charge that is located in the nucleus of an atom is called a… |
| 8 | The electrons found farthest from an atom’s nucleus that are able to participate in covalent (or ionic) bonds. |
| 9 | When atoms combine and join together in definite proportions (ex: CaCl2), they form something called a … |
| 10 | This value represents the number of protons in an atom and determines the “element identity” of a particular atom. (Ex: There are 6 protons in every atom of the element carbon. If there are 7 protons, the atom is now the element nitrogen. If there are 5 protons, the atom is now the element boron.) |
| 11 | This is a type of compound that is formed when one atom “gives” an electron to another atom. The atom that gave its electron now has an overall positive charge because it lost a negatively-charged electron. The atom that received the electron now has an overall negative charge because it gained a negatively-charged electron. Because they now have opposite charges (+ and -), the atoms are attracted to one another, forming an ionic bond. Remember, opposites attract! |
| 12 | A subatomic particle with a negative (-) charge that is located outside the nucleus of an atom is called a… |
| 13 | These are atoms of the same element that contain different numbers of neutrons. |